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BELL, BOYD & LLOYD, LLP
P.O. BOX 1135
CHICAGO, IL 60690

EXAMINER	
KERZHNER, ALEKSANDR	
ART UNIT	**PAPER NUMBER**
2162	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/521,832	HEUER ET AL.	
	Examiner	Art Unit	
	Aleksandr Kerzhner	2162	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 November 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *15-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *15-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 November 2007* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This office action has been issued in response to amendment filed 11/08/2007. Claims 15-28 are pending. Applicants arguments have been carefully and respectfully considered in light of the instant amendment and are persuasive, except as they relate to the claim rejection under 35 USC 103 and objection to the specification, as will be discussed below.

Accordingly, this action has been made **FINAL**.

Priority

2. As required bye M.P.E.P. 201.14(c), acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). Claim for priority is acknowledged to be based on applications filed on 07/15/2002 (Germany 102 31 971.5) and 10/18/2002 (Germany 102 48 758.8).

Oath/Declaration

3. The applicant's oath/declaration has been reviewed by the examiner and is found to conform to the requirements prescribed in 37 C.F.R. 1.63.

Drawings

4. The replacement drawings were received on 11/08/2007. These drawings are acceptable.

Specification

5. The disclosure is objected to because it contains an embedded hyperlink and/or other form of browser-executable code. (Please see e.g., page 5, paragraph [0018], "The transmission of an XML document is effected "depth first" in the case of the BiM method, but the operation of schema compilation at the decoder demands a "breadth first" structure, where these expressions are explained in detail on the Internet page http://www.generation5.org/simple_search.shtml, for example.") (Emphasis added)

Applicant is required to delete the embedded hyperlink and/or other form of browser-executable code. See MPEP § 608.01.

Claim Objections

6. **Claims 15 and 20** are objected to because of the following informalities:

Regarding **claims 15 and 20**, it is not clear what "the encoded XML schema" and "the encoded XML document" is meant to refer to. Steps of "encoding the normalized XML schema," and "encoding the XML document" are noted, however, it is not clear that such normalizing and/or encoding produces "an encoded XML schema," and/or "an encoded XML document." A schema/document can be normalized/encoded in memory and not stored as "a normalized XML schema," "an encoded XML schema," and/or "an encoded XML document."

Appropriate correction is required.

7. Regarding **claims 25 and 27**, claims recite the limitations "encoder adapted to" and "decoder unit, adapted to" is indirect, suggest optionally, and passive which renders any recitation claimed after not be given patentable weight. Appropriate correction is required.

The Examiner points to MPEP 2106 II.C. wherein the claim's recitation of "adapted to" raises the question to Language that suggests or makes optional but does not require steps to be performed or does not limit a claim to a particular structure does not limit the scope of a claim or claim limitation.

Office personnel must rely on the applicant's disclosure to properly determine the meaning of the claims. Limitations appearing in the specification but not recited in the claim are not read into the claim; therefore, in this case, the recitation of "adapted to" as interpreted in light of the specification provide the "functionality" or "the capability" of the device/system to perform the steps without definite disclosure limiting or excluding any alternative, negative, or even all together suggest actually performing or implementing the functionality that is database management system is capable of.

Therefore, any cited art that teaches the steps otherwise in the alternative can be used to reject the instant application. The computer being adapted to perform a function does not mean that it will ever actually perform that functionality (i.e. "adapted to" should be clarified and changed to a more definite term).

8. **Claim 27** is objected to because of the following informalities:

Regarding **claim 27**, claim recites "generate and encoded XML document." Examiner believes this to be a simple typographical error, and believes the intent to be "generate an encoded XML document."

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. **Claims 15, 19-20, 24-28** are rejected under 35 U.S.C. 103(a) as being unpatentable over Seyrat et al., FR 2 813 743 (Hereinafter "Seyrat et al.") in view of Seyrat et al., "Text of ISO/EIC FCD 15938-1 Information Technology - Multimedia Content Description Interface - Part 1 Systems" (Hereinafter "ISO").

Regarding **claim 15**, Seyrat et al. shows:

A method for encoding and transmitting an Extensible Markup Language (XML) document, wherein an XML schema is associated with the XML document, the method comprising:

a) generating a normalized XML schema (*normalizing XML schema, see e.g., page 3, lines 6-8, Fig 1*)

b) encoding the normalized XML schema using a metaschema; (*compiling the normalized structure schema using metaschema, see e.g., page 3, lines 10-13*)

c) transmitting the encoded XML schema in a first bit stream; (*transmitting an encoded XML schema, see e.g., page 4, lines 25-28*)

d) generating an encoded XML document by encoding the XML document using the normalized XML schema; (*compressing the structured document using schema, see e.g., page 3, lines 15-19*) and

e) transmitting the encoded XML document in a second bit stream, wherein the first and second bit streams are provided for reception for a decoder. (*transmitting the encoded XML document, possible to transmit without schema, see e.g., page 3, line 34 – page 4, line 3*)

Seyrat et al. does not expressly disclose the normalization of the XML schema comprising one of:

simplifying a group which contains only one element, the group being dissolved and the one element being put into a content model at a level of the dissolved group, with attributes minOccurs and maxOccurs of the element being replaced by a product of corresponding attributes of the dissolved group and the one element prior to regrouping;

simplifying a choice group containing an element with an attribute value minOccurs = O, the attribute minOccurs of the choice group being set to 0 irrespective of a previous value, with the element having the attribute value minOccurs = 0 being assigned an attribute value minOccurs = 1; and

simplifying nested choice groups, wherein if a choice group contains a further choice group containing attribute values minOccurs = maxOccurs = 1, the further choice

group is dissolved and contents of the further choice group are incorporated directly into the choice group;

However, ISO teaches:

The normalization of the XML schema comprising one of:

simplifying a group which contains only one element, the group being dissolved and the one element being put into a content model at a level of the dissolved group, with attributes minOccurs and maxOccurs of the element being replaced by a product of corresponding attributes of the dissolved group and the one element prior to regrouping; (*See e.g., page 37, Syntax Tree Transformation - Group simplification rule, which clearly shows and describes identical procedure as claimed*)

simplifying a choice group containing an element with an attribute value. minOccurs = O, the attribute minOccurs of the choice group being set to 0 irrespective of a previous value, with the element having the attribute value minOccurs = 0 being assigned an attribute value minOccurs = 1; *See e.g., page 37, Syntax Tree Transformation – Empty choice simplification, which clearly shows and describes identical procedure as claimed*) and

simplifying nested choice groups, wherein if a choice group contains a further choice group containing attribute values minOccurs = maxOccurs = 1, the further choice group is dissolved and contents of the further choice group are incorporated directly into the choice group; (*See e.g., page 37-38, Syntax Tree Transformation – Choice Simplification rule, which clearly shows and describes identical procedure as claimed*)

Seyrat et al. teaches a general way of leveling the tree of schema in order to reduce and simplify it. ISO teaches a non-destructive way to normalize XML schema in order to improve compactness. Thus, it would have been obvious to one of ordinary skill in the art to apply the normalization technique as taught by ISO, to improve the normalization method of Seyrat et al. for the predicable result of achieving a more compact schema that in turn is quicker to transmit.

Regarding **claim 19**, Seyrat et al. in view of ISO shows:

Information for at least one of an inheritance tree of types, global elements and substitution groups is encoded, and wherein at least one of (i) each type is described by both an item of information about a respective type code with reference to a master type and a length of all type codes which refer to the type described, (ii) each global element is described by both a length of a respective schema branch code (SBC) and the respective SBC, and (iii) each element in a substitution group is described by both a length of a respective substitution code and the respective substitution code. (Seyrat et al.: encoding element with length, see e.g., page 15, line 33 – page 16, line 1; *ISO: encoding using Schema Branch Codes, see e.g., page 23: 7.3.1.2 Navigation Path, page 26, 7.3.1.4 Extension and forward/backward compatibility of navigation paths, encoding length information, see e.g., page 28, Rule 4*)

Regarding **claim 20**, Seyrat et al. shows:

A method for encoding, transmitting and decoding an Extensible Markup Language (XML) document, wherein an XML schema is associated with the XML document, the method comprising:

a) generating a normalized XML schema (*normalizing XML schema, see e.g., page 3, lines 6-8, Fig 1*)

b) encoding the normalized XML schema using a metaschema; (*compiling the normalized structure schema using metaschema, see e.g., page 3, lines 10-13*)

c) transmitting the encoded XML schema in a first bit stream; (*transmitting an encoded XML schema, see e.g., page 4, lines 25-28*)

d) generating an encoded XML document by encoding the XML document using the normalized XML schema; (*compressing the structured document using schema, see e.g., page 3, lines 15-19*) and

e) transmitting the encoded XML document in a second bit stream, wherein the first and second bit streams are provided for reception for a decoder; (*transmitting the encoded XML document, possible to transmit without schema, see e.g., page 3, line 34 – page 4, line 3*)

f) decoding the encoded XML schema transmitted in the first bit stream into the normalized XML schema by using the metaschema, wherein the normalized schema and the metaschema correspond to the schemas used in the encoding; (*decoding the encoded XML schema using techniques and metaschema corresponding to the once used during encoding, see e.g., page 4, lines 15-28*) and

g) decoding the encoded XML document transmitted in the second bit stream by using the normalized XML schema, without performing a further normalization of the normalized XML schema. (*decoding the encoded XML document using schema, see e.g., page 18, lines 33-41*)

Seyrat et al. does not expressly disclose the normalization of the XML schema comprising one of:

simplifying a group which contains only one element, the group being dissolved and the one element being put into a content model at a level of the dissolved group, with attributes minOccurs and maxOccurs of the element being replaced by a product of corresponding attributes of the dissolved group and the one element prior to regrouping;

simplifying a choice group containing an element with an attribute value minOccurs = O, the attribute minOccurs of the choice group being set to 0 irrespective of a previous value, with the element having the attribute value minOccurs = 0 being assigned an attribute value minOccurs = 1; and

simplifying nested choice groups, wherein if a choice group contains a further choice group containing attribute values minOccurs = maxOccurs = 1, the further choice group is dissolved and contents of the further choice group are incorporated directly into the choice group;

However, ISO teaches:

The normalization of the XML schema comprising one of:

simplifying a group which contains only one element, the group being dissolved and the one element being put into a content model at a level of the dissolved group, with attributes minOccurs and maxOccurs of the element being replaced by a product of corresponding attributes of the dissolved group and the one element prior to regrouping; (*See e.g., page 37, Syntax Tree Transformation - Group simplification rule, which clearly shows and describes identical procedure as claimed*)

simplifying a choice group containing an element with an attribute value. minOccurs = O, the attribute minOccurs of the choice group being set to 0 irrespective of a previous value, with the element having the attribute value minOccurs = 0 being assigned an attribute value minOccurs = 1; *See e.g., page 37, Syntax Tree Transformation – Empty choice simplification, which clearly shows and describes identical procedure as claimed*) and

simplifying nested choice groups, wherein if a choice group contains a further choice group containing attribute values minOccurs = maxOccurs = 1, the further choice group is dissolved and contents of the further choice group are incorporated directly into the choice group; (*See e.g., page 37-38, Syntax Tree Transformation – Choice Simplification rule, which clearly shows and describes identical procedure as claimed*) Seyrat et al. teaches a general way of leveling the tree of schema in order to reduce and simplify it. ISO teaches a non-destructive way to normalize XML schema in order to improve compactness. Thus, it would have been obvious to one of ordinary skill in the art to apply the normalization technique as taught by ISO, to improve the normalization method of Seyrat et al. for the predicable result of achieving a more compact schema that in turn is quicker to transmit.

Regarding **claim 24**, Seyrat et al. in view of ISO shows:

Information for at least one of an inheritance tree of types, global elements and substitution groups is first decoded, and wherein at least one of (i) each type is described by both an item of information about a respective type code with reference to a master type and a length of all type codes which refer to the type described, (ii) each

global element is described by both a length of a respective schema branch code (SBC) and the respective SBC, and (iii) each element in a substitution group is described by both a length of a respective substitution code and the respective substitution code. (Seyrat et al.: decoding encoded element with length, see e.g., page 15, line 33 – page 16, line 1; *ISO: use of Schema Branch Codes, see e.g., page 23: 7.3.1.2 Navigation Path, page 26, 7.3.1.4 Extension and forward/backward compatibility of navigation paths, coding of length information, see e.g., page 28, Rule 4*)

Regarding **claim 25**, Seyrat et al. shows:

A device for encoding an Extensible Markup Language (XML) document, wherein an XML schema is associated with the XML document, comprising:

an encoder (*Fig 1#16*), adapted to

a) generate a normalized XML schema (*normalizing XML schema, see e.g., page 3, lines 6-8, Fig 1*)

b) encode the normalized XML schema using a metaschema, (*compiling the normalized structure schema using metaschema, see e.g., page 3, lines 10-13*) wherein the encoded XML schema is to be transmitted in a first bit stream; (*transmitting an encoded XML schema, see e.g., page 4, lines 25-28*) and

c) generate an encoded XML document by encoding the XML document using the normalized XML schema, (*compressing the structured document using schema, see e.g., page 3, lines 15-19*) wherein the encoded XML document is to be transmitted in a second bit stream, with the first and second bit streams being provided for reception for

a decoder (*transmitting the encoded XML document, possible to transmit without schema, see e.g., page 3, line 34 – page 4, line 3*)

Seyrat et al. does not expressly disclose the normalization of the XML schema comprising one of:

simplifying a group which contains only one element, the group being dissolved and the one element being put into a content model at a level of the dissolved group, with attributes minOccurs and maxOccurs of the element being replaced by a product of corresponding attributes of the dissolved group and the one element prior to regrouping;

simplifying a choice group containing an element with an attribute value minOccurs = O, the attribute minOccurs of the choice group being set to 0 irrespective of a previous value, with the element having the attribute value minOccurs = 0 being assigned an attribute value minOccurs = 1; and

simplifying nested choice groups, wherein if a choice group contains a further choice group containing attribute values minOccurs = maxOccurs = 1, the further choice group is dissolved and contents of the further choice group are incorporated directly into the choice group;

However, ISO teaches:

The normalization of the XML schema comprising one of:

simplifying a group which contains only one element, the group being dissolved and the one element being put into a content model at a level of the dissolved group, with attributes minOccurs and maxOccurs of the element being replaced by a product of corresponding attributes of the dissolved group and the one element prior to regrouping;

(*See e.g., page 37, Syntax Tree Transformation - Group simplification rule, which clearly shows and describes identical procedure as claimed*)

simplifying a choice group containing an element with an attribute value. minOccurs = O, the attribute minOccurs of the choice group being set to 0 irrespective of a previous value, with the element having the attribute value minOccurs = 0 being assigned an attribute value minOccurs = 1; *See e.g., page 37, Syntax Tree Transformation – Empty choice simplification, which clearly shows and describes identical procedure as claimed*) and

simplifying nested choice groups, wherein if a choice group contains a further choice group containing attribute values minOccurs = maxOccurs = 1, the further choice group is dissolved and contents of the further choice group are incorporated directly into the choice group; (*See e.g., page 37-38, Syntax Tree Transformation – Choice Simplification rule, which clearly shows and describes identical procedure as claimed*)

Seyrat et al. teaches a general way of leveling the tree of schema in order to reduce and simplify it. ISO teaches a non-destructive way to normalize XML schema in order to improve compactness. Thus, it would have been obvious to one of ordinary skill in the art to apply the normalization technique as taught by ISO, to improve the normalization method of Seyrat et al. for the predicable result of achieving a more compact schema that in turn is quicker to transmit.

Regarding **claim 26**, Seyrat et al. in view of ISO shows:

The encoder unit covers a configurable byte code interpreter which interprets information in a byte code and which, depending on a configuration, produces a code

from the structured document based on a byte code which represents one of a path and a payload. (*Seyrat: See page 11, lines 1-9, where MPEG-7 content may be delivered independently or together with the content they describe; page 47: 8.4.6.12 Consumption, where user is presented with content*)

Regarding **claim 27**, Seyrat et al. shows:

A system for encoding and decoding an Extensible Markup Language (XML) document comprising:

an encoder unit (*Fig 1#16*) adapted to:

a) generate a normalized XML schema associated with the XML document (*normalizing XML schema, see e.g., page 3, lines 6-8, Fig 1*)

b) encode the normalized XML schema using a metaschema, (*compiling the normalized structure schema using metaschema, see e.g., page 3, lines 10-13*) wherein the encoded XML schema is to be transmitted in a first bit stream; (*transmitting an encoded XML schema, see e.g., page 4, lines 25-28*) and

c) generate and encoded XML document by encoding the XML document using the normalized XML schema, (*compressing the structured document using schema, see e.g., page 3, lines 15-19*) wherein the encoded XML document is to be transmitted in a second bit stream, with the first and second bit streams being provided for reception for a decoder (*transmitting the encoded XML document, possible to transmit without schema, see e.g., page 3, line 34 – page 4, line 3*); and

a decoder unit (*Fig 1#16'*), adapted to:

f) decode the encoded XML schema transmitted in the first bit stream into the normalized XML schema by using the metaschema, wherein the normalized schema and the metaschema correspond to the schemas used in the encoding; (*decoding the encoded XML schema using techniques and metaschema corresponding to the once used during encoding, see e.g., page 4, lines 15-28*) and

g) decode the encoded XML document transmitted in the second bit stream by using the normalized XML schema, without performing a further normalization of the normalized XML schema. (*decoding the encoded XML document using schema, see e.g., page 18, lines 33-41*)

Seyrat et al. does not expressly disclose the normalization of the XML schema comprising one of:

simplifying a group which contains only one element, the group being dissolved and the one element being put into a content model at a level of the dissolved group, with attributes minOccurs and maxOccurs of the element being replaced by a product of corresponding attributes of the dissolved group and the one element prior to regrouping;

simplifying a choice group containing an element with an attribute value minOccurs = O, the attribute minOccurs of the choice group being set to 0 irrespective of a previous value, with the element having the attribute value minOccurs = 0 being assigned an attribute value minOccurs = 1; and

simplifying nested choice groups, wherein if a choice group contains a further choice group containing attribute values minOccurs = maxOccurs = 1, the further choice

group is dissolved and contents of the further choice group are incorporated directly into the choice group;

However, ISO teaches:

The normalization of the XML schema comprising one of:

simplifying a group which contains only one element, the group being dissolved and the one element being put into a content model at a level of the dissolved group, with attributes minOccurs and maxOccurs of the element being replaced by a product of corresponding attributes of the dissolved group and the one element prior to regrouping; (*See e.g., page 37, Syntax Tree Transformation - Group simplification rule, which clearly shows and describes identical procedure as claimed*)

simplifying a choice group containing an element with an attribute value. minOccurs = O, the attribute minOccurs of the choice group being set to 0 irrespective of a previous value, with the element having the attribute value minOccurs = 0 being assigned an attribute value minOccurs = 1; *See e.g., page 37, Syntax Tree Transformation – Empty choice simplification, which clearly shows and describes identical procedure as claimed*) and

simplifying nested choice groups, wherein if a choice group contains a further choice group containing attribute values minOccurs = maxOccurs = 1, the further choice group is dissolved and contents of the further choice group are incorporated directly into the choice group; (*See e.g., page 37-38, Syntax Tree Transformation – Choice Simplification rule, which clearly shows and describes identical procedure as claimed*)

Seyrat et al. teaches a general way of leveling the tree of schema in order to reduce and simplify it. ISO teaches a non-destructive way to normalize XML schema in order to improve compactness. Thus, it would have been obvious to one of ordinary skill in the art to apply the normalization technique as taught by ISO, to improve the normalization method of Seyrat et al. for the predicable result of achieving a more compact schema that in turn is quicker to transmit.

Regarding **claim 28**, as well as understood, Seyrat et al. in view of ISO shows:

The decoder unit covers a configurable byte code interpreter which is configurable via information from the byte stream and which, depending on a configuration, produces at least one of a path, a payload and a byte code from the byte stream based on a byte code. (*Seyrat: See page 11, lines 1-9, where MPEG-7 content may be delivered independently or together with the content they describe; page 47: 8.4.6.12 Consumption, where user is presented with content*)

10. **Claims 16 and 21** are rejected under 35 U.S.C. 103(a) as being unpatentable over Seyrat et al. in view of ISO as applied to claims 15 and 20 above, and further in view of C. M. Sperberg-McQueen, "Canonical XML forms for post-schema-validation infosets: A preliminary reconnaissance" (Herein after "Sperberg-McQueen").

Regarding **claim 16**, Seyrat et al. in view of ISO teaches all the claimed limitations as put forth in the rejections of claim 15 above, except it does not expressly disclose:

Restructuring at least one of element declarations and attributes declarations of a schema definition of a structured document such that anonymous type definitions are

taken out of the respective at least one of element declarations and attribute declarations and are given at least one of a name and a code which is used for referencing purposes for the corresponding element.

However, Sperberg-McQueen teaches:

Restructuring at least one of element declarations and attributes declarations of a schema definition of a structured document such that anonymous type definitions are taken out of the respective at least one of element declarations and attribute declarations and are given at least one of a name and a code which is used for referencing purposes for the corresponding element. (*A technique for restructuring XML, naming an anonymous type, taking elements out of declaration and naming them with code names such as "_ct_anon01," see e.g., Page 4, 2.2 Names of types, lines 5-31, Page 8: 3.1 Dump format based on existing transfer syntax – page 9, line 27*)

Seyrat et al. in view of ISO teaches normalizing a structured document. Sperberg-McQueen teaches a non-destructive way to restructure an XML document in order to transform anonymous types into named types. The advantages and disadvantages of using an anonymous versus a named type are well known in the art of structured documents. For instance while anonymous types can be more readable, named types have many advantages such as ability to reuse, reduced possibility of error, and taking up less space if reused more then once. A smaller schema is easier to transmit and faster to encode and decode. Thus, it would have been obvious to one of ordinary skill in the art to apply the transformation technique as taught by Sperberg-McQueen, to improve the encoding, decoding and transition steps of method taught by

Seyrat et al. in view of ISO, for the predicable result of achieving a schema that is sometimes easier to encode, decode and transmit.

Regarding **claim 21**, Seyrat et al. in view of ISO teaches all the claimed limitations as put forth in the rejections of claim 20 above, except it does not expressly disclose:

Restructuring at least one of element declarations and attribute declarations of a structured document such that anonymous types, to each of which at least one of a name and a code has been assigned for purposes of transmission, are inserted in the respective at least one of element declarations and attribute declarations by which the respective anonymous type is referenced.

However, Sperberg-McQueen teaches:

Restructuring at least one of element declarations and attribute declarations of a structured document such that anonymous types, to each of which at least one of a name and a code has been assigned for purposes of transmission, are inserted in the respective at least one of element declarations and attribute declarations by which the respective anonymous type is referenced. (*An easily reversible technique for restructuring XML, naming an anonymous type, taking elements out of declaration and naming them with code names such as "_ct_anon01," see e.g., Page 4, 2.2 Names of types, lines 5-31, Page 8: 3.1 Dump format based on existing transfer syntax – page 9, line 27*)

Seyrat et al. in view of ISO teaches normalizing a structured document. Sperberg-McQueen teaches a non-destructive way to restructure an XML document in

order to transform anonymous types into named types. The advantages and disadvantages of using an anonymous versus a named type are well known in the art of structured documents. For instance while anonymous types can be more readable, named types have many advantages such as ability to reuse, reduced possibility of error, and taking up less space if reused more then once. A smaller schema is easier to transmit and faster to encode and decode. Thus, it would have been obvious to one of ordinary skill in the art to apply the transformation technique as taught by Sperberg-McQueen, to improve the encoding, decoding and transition steps of method taught by Seyrat et al. in view of ISO, for the predicable result of achieving a schema that is sometimes easier to encode, decode and transmit.

11. **Claims 17-18 and 22-23** are rejected under 35 U.S.C. 103(a) as being unpatentable over Seyrat et al. in view of ISO as applied to claims 15 and 20 above, and further in view of Girardot et al., "Millau: an encoding format for efficient representation and exchage of XML over the Web" (Herein after " Girardot et al.").

Regarding **claim 17**, Seyrat et al. in view of ISO teaches all the claimed limitations as put forth in the rejections of claims 15 above, except it does not expressly disclose:

In place of at least one of type names, element names and names of substitution groups, only numbers and at least one table containing an allocation between numbers and the respective at least one of type names, element names and names of substitution groups are encoded.

However, Giradot et al. teaches:

In place of at least one of type names, element names and names of substitution groups (*encoding types, attributes, and other structures see e.g., page 750 left-hand side, paragraph 1*), only numbers and at least one table containing an allocation between numbers and the respective at least one of type names (*use of tokens that are numbers see e.g., page 750 left-hand side, paragraph 1, table 1*), element names and names of substitution groups are encoded. (*page 750 left-hand side, paragraph 1 – page 751 right-hand side paragraph 2, tables 1 and 2*)

Seyrat et al. in view of ISO teaches normalizing a structured document and then transmitting it and decoding it. Giradot et al. teaches a way to compress an XML document in order to encode not only data but also types and attributes using only numbers and a look up table. The advantage of doing so is to compress XML document more efficiently then traditional data compression algorithms while retraining the structural information in the data they exchange. (*See Girardot et al., page 747 – 748: 1. Introduction*). Thus, it would have been obvious to one of ordinary skill in the art to apply the compression technique as taught by Giradot et al., to improve the encoding, decoding and transition steps of method taught by Seyrat et al. in view of ISO, for the predicable result of achieving a more compressed schema that retains structural characteristics that is faster to transmit.

Regarding **claim 18**, Seyrat et al. in view of ISO teaches all the claimed limitations as put forth in the rejections of claims 15 above, except it does not expressly disclose:

At least one list comprising at least one of types names, element names, and names of substitution groups, as well as positions of the respective type names, element names and names of substitution groups in the list, are encoded in place of the respective type names, element names and names of substitution groups.

However, Giradot et al. teaches:

At least one list comprising at least one of types names, element names, and names of substitution groups, as well as positions of the respective type names, element names and names of substitution groups in the list, are encoded in place of the respective type names, element names and names of substitution groups. (*page 750 left-hand side, paragraph 1 – page 751 right-hand side paragraph 2, tables 1 and 2, where "table" is read on" list")*

Seyrat et al. in view of ISO teaches normalizing a structured document and then transmitting it and decoding it. Giradot et al. teaches a way to compress an XML document in order to encode not only data but also types and attributes using only numbers and a look up table. The advantage of doing so is to compress XML document more efficiently then traditional data compression algorithms while retraining the structural information in the data they exchange. (*See Girardot et al., page 747 – 748: 1. Introduction*). Thus, it would have been obvious to one of ordinary skill in the art to apply the compression technique as taught by Giradot et al., to improve the encoding, decoding and transition steps of method taught by Seyrat et al. in view of ISO, for the predicable result of achieving a more compressed schema that retains structural characteristics that is faster to transmit.

Regarding **claim 22**, Seyrat et al. in view of ISO teaches all the claimed limitations as put forth in the rejections of claims 20 above, except it does not expressly disclose:

At least one of type names, element names and names of substitution groups are decoded via numbers and at least one table containing an allocation between numbers and the respective at least one of type names, element names and names of substitution groups.

However, Giradot et al. teaches:

At least one of type names, element names and names of substitution groups are decoded (see page 747: 1. Introduction) via numbers and at least one table containing an allocation between numbers and the respective at least one of type names, element names and names of substitution groups. (*page 750 left-hand side, paragraph 1 – page 751 right-hand side paragraph 2, tables 1 and 2*)

Seyrat et al. in view of ISO teaches normalizing a structured document and then transmitting it and decoding it. Giradot et al. teaches a way to compress an XML document in order to encode not only data but also types and attributes using only numbers and a look up table. The advantage of doing so is to compress XML document more efficiently then traditional data compression algorithms while retraining the structural information in the data they exchange. (*See Girardot et al., page 747 – 748: 1. Introduction*). Thus, it would have been obvious to one of ordinary skill in the art to apply the compression technique as taught by Giradot et al., to improve the encoding, decoding and transition steps of method taught by Seyrat et al. in view of ISO, for the

predicable result of achieving a more compressed schema that retains structural characteristics that is faster to transmit.

Regarding **claim 23**, Seyrat et al. in view of ISO teaches all the claimed limitations as put forth in the rejections of claims 20 above, except it does not expressly disclose:

At least one of type names, element names and names of substitution groups are decoded via at least one list comprising the respective at least one of type names, element names and names of substitution groups and positions of the respective at least one of type names, element names and names of substitution groups in the list.

However, Giradot et al. teaches:

At least one of type names, element names and names of substitution groups are decoded (see page 747: 1. Introduction) via at least one list comprising the respective at least one of type names, element names and names of substitution groups and positions of the respective at least one of type names, element names and names of substitution groups in the list. (*page 750 left-hand side, paragraph 1 – page 751 right-hand side paragraph 2, tables 1 and 2, where "table" is read on" list"*)

Seyrat et al. in view of ISO teaches normalizing a structured document and then transmitting it and decoding it. Giradot et al. teaches a way to compress an XML document in order to encode not only data but also types and attributes using only numbers and a look up table. The advantage of doing so is to compress XML document more efficiently then traditional data compression algorithms while retraining the structural information in the data they exchange. (*See Girardot et al., page 747 – 748: 1.*

Introduction). Thus, it would have been obvious to one of ordinary skill in the art to apply the compression technique as taught by Giradot et al., to improve the encoding, decoding and transition steps of method taught by Seyrat et al. in view of ISO, for the predicable result of achieving a more compressed schema that retains structural characteristics that is faster to transmit.

Response to Arguments

1. Applicant's arguments filed 11/08/2007 have been fully considered but they are not persuasive as they relate to specification objection and to the 35 U.S.C. 103 rejections as will be described bellow.

2. Regarding objection to the specification, Applicant argues:

The Specification was also objected to for alleged informalities. Specifically, the Office Action states that an improper hyperlink and/or executable code was embedded within the text (page 5). After carefully reviewing the specification (i.e., the preliminary amendment dated January 18, 2005), Applicant cannot find any embedded hyperlinks in the disclosure.

Examiner respectfully disagrees. On page 5, paragraph [0018], of the preliminary amendment to the specification dated January 18, 2005, Applicant recites:

"The transmission of an XML document is effected "depth first" in the case of the BiM method, but the operation of schema compilation at the decoder demands a "breadth first" structure, where these expressions are explained in detail on the Internet

page http://www.generation5.org/simple_search.shtml, for example.") (Emphasis added).

Thus, the objection to the specification is maintained by the Examiner.

3. Regarding 35 U.S.C. 103 rejections, Applicant argues:

"Specifically, the prior art, alone or in combination, fails to teach or suggest the features of "b) encoding the normalized XML schema using a metaschema; c) transmitting the encoded XML schema in a first bit stream; d) generating an encoded XML document by encoding the XML document using the normalized XML schema; and e) transmitting the encoded XML document in a second bit stream, wherein the first and second bit streams are provided for reception for a decoder" as recited in independent claim 15, and similarly recited in independent claims 20, 25 and 27."

"Regarding Seyrat, Applicant notes that, for the sake of simplicity, French patent FR 2813743 will not be referenced in this response. Instead, US Publication 2004/0013307, which appears to be a US analog to the French patent, will be used instead. It is believed that the US publication contains the same disclosure for the purposes of the present examination."

"Seyrat does not disclose the encoding of a normalized XML schema using a metaschema. Seyrat discloses method for compressing and decompressing a structured document associated with at least one tree structure schema defining a structure of the document and including nested structure elements representing data sets, where the structure elements are distributed in three categories: structured root

elements broken down into (1) structured or (2) unstructured groups of elements and (3) base elements corresponding to the lowest level elements in the structure, where each base element and root element is associated with an information type ([0010]). With regard to compression ([0011]), the method includes the steps of (1) performing a syntactic analysis of the document's structure schema (XML schema) and normalizing it so as to obtain a single predefined sequence of the structure elements of the schema, (2) compiling the normalized structure schema to obtain one finite automaton per root element, each automaton including states interconnected by transitions respectively representing the structure elements, and (3) compressing the structured document including executing the finite automata on the document ([0012-14])."

"Here, Seyrat generates finite automata using a structured schema that is used only for compressing the structured document (see [0015]). While the compression involves "encoding" of an XML document, it does not encode the on the basis of another schema (i.e. metaschema), and transmit the encoded schema. Seyrat additionally discloses that the structured schema or the normalized schema or the finite automata may be transmitted (see [0019]). None of the other cited references solve the deficiencies of Seyrat, discussed above. For at least these reasons, Applicant submits the rejection is traversed and should be withdrawn."

Examiner respectfully disagrees.

As Applicant correctly noted, US Publication 2004/0013307 is believed by examiner to be a US analog to the French patent, and Examiner in turn will respond to Applicants arguments referring to the abovementioned publication. Examiner further

encloses with the current Office action, a translation of the French patent FR 2813743 for the sake of making record complete.

The following citations, believed by the examiner to be analogous to the French patent above are provided bellow for the ease of argument:

[0011] According to the invention, at least one information type of the base elements is first associated with an adapted compression algorithm, the method including the following steps:

[0012] performing a syntactic analysis of the document's structure schema and normalizing it so as to obtain a single predefined sequence of the structure elements of the schema,

[0013] compiling the normalized structure schema to obtain one finite automaton per root element, each automaton including states interconnected by transitions respectively representing the structure elements, and

[0014] compressing the structured document including executing the finite automata on the document, and executing the compression algorithm when a data set having an information type associated with said algorithm is encountered in the document to be compressed.

Per argument that "Seyrat does not disclose the encoding of a normalized XML schema using a metaschema," and "while the compression involves "encoding" of an XML document, it does not encode the on the basis of another schema (i.e. metaschema), and transmit the encoded schema. "

Examiner respectfully refers to the paragraph [0013] above of "compiling the normalized structure schema to obtain one finite automaton per root element, each automaton including states interconnected by transitions respectively representing the structure elements" ([0013]).

Examiner submits that the cited paragraph [0013] anticipates the limitation of "b) encoding the normalized XML schema using a metaschema" in the following way.

First, the "normalized structure schema" is read on "the normalized XML schema" as the Applicant admits above "Seyrat discloses method for compressing and decompressing a structured document associated with at least one tree structure schema defining a structure of the document and including nested structure elements representing data sets" ("Emphasis added"). Paragraph [0012] states "performing a syntactic analysis of the document's structure schema and normalizing it" Hence it is clear that the "normalized structure schema" of the Seyrat can be read on "the normalized XML schema" as claimed.

Second, Examiner submits that the "normalized structure schema" is not only a schema but further is a "metaschema" as the normalized version of the schema is in itself a schema for the non-normalized schema, and hence is a "metaschema."

Third, "compiling the normalized structure schema" ([0013]) reads on "encoding the normalized XML schema using a metaschema" because the step of compiling (reading on encoding) operates on the normalized structure schema which in itself is also a metaschema as argued above. As the limitation of "using a metaschema," when interpreted to the broadest reasonable extent, as such interpretation is required (*"Office*

personnel are to give claims their broadest reasonable interpretation in light of the supporting disclosure. In re Morris, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997). Limitations appearing in the specification but not recited in the claim are not read into the claim. In re Prater, 415 F.2d 1393, 1404-05, 162 USPQ 541,550-551 (CCPA 1969)" (MPEP p 2100-8, c 2, l 45-48; p 2100-9, c 1, l 1-4). The Examiner has full latitude to interpret each claim in the broadest reasonable sense. The Examiner will reference prior art using terminology familiar to one of ordinary skill in the art. Such an approach is broad in concept and can be either explicit or implicit in meaning.), clearly is anticipated by "compiling the normalized structure schema" as the normalized structure schema (also a metaschema) is clearly used in such compiling by the mere fact that it is being compiled.

Per argument that "Seyrat additionally discloses that the structured schema or the normalized schema or the finite automata may be transmitted (see [0019])"

As no further guidance to the nature of the argument except underlining of "or" is given, Examiner believes that Applicants argument is that only one of the schemas above may be transmitted (as understood by the "or" underlining).

Examiner respectfully disagrees. A person of ordinary skill in the art would no doubt understand that use of "or" when describing transmitting items does not prohibit in any way from transmitting more then one item from the list. At best it provides an alternative to the implementation, and clearly anticipates transmitting any permutation of combination of the items from the list. MPEP 2141.03 VI further states that providing in alternative does not teach away from the claims:

"However, "the prior art's mere disclosure of more than one alternative does not constitute a teaching away from any of these alternatives because such disclosure does not criticize, discredit, or otherwise discourage the solution claimed...." In re Fulton, 391 F.3d 1195, 1201, 73 USPQ2d 1141, 1146 (Fed. Cir. 2004). >See also MPEP § 2123.<"

Thus, 35 USC 103 rejections are maintained by the Examiner.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

The examiner requests, in response to this Office action, support be shown for language added to any original claims on amendment and any new claims. That is, indicate support for newly added claim language by specifically pointing to page(s) and line no(s) in the specification and/or drawing figure(s). This will assist the examiner in prosecuting the application.

When responding to this office action, Applicant is advised to clearly point out the patentable novelty which he or she thinks the claims present, in view of the state of the art disclosed by the references cited or the objections made. He or she must also show how the amendments avoid such references or objections See 37 CFR 1.111(c).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aleksandr Kerzhner whose telephone number is (571)270-1760. The examiner can normally be reached on Mon-Fri 9:00-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Breene can be reached on (571) 272-4107. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A.K.,

/Aleksandr Kerzhner/
01/13/2008

Jon Rolf Flintin
Primary Examiner
TC 2100